Oleksandr Kolesnyk

Borys Grinchenko Kyiv University, Kyiv, Ukraine
`axli@i.ua`

The Mythic Multiverse Through the Scope of Language: The "Procedural Anatomy" of Verbal Modelling

Abstract

This article discusses the logical and cognitive premises of verbal world modelling and focuses on the phenomena of irrationally triggered categorization and myth-oriented semiosis as the fundamental mechanisms of construing alternative realities. The paper demonstrates the reconstruction of interpretative mythic axioms via the etymological analysis of the designations of WORLD in different Indo–European languages. The paper proposes a formal model of a possible world created on the basis of mythic concepts, in addition to a multi-vectored algorithm for the configuration of a possible world. The article also proposes a typology of possible worlds which constitute a "multiverse". The paper focuses on the patterns of logical operations and cognitive procedures responsible for secondary designation as "sense-creating" and "world-creating" acts. These patterns correspond to the functioning and interaction of open systems, while the sequence of operational steps follows the logic of assembling a functional construal.

Keywords: possible world; alternative reality; designation; semiosis; semantic feature; noematic sense; system

1 Introduction

Present-day globalized "post-industrial" or "informational" civilization is marked by permanent conflicts, contradictions, paradoxes, cultural-conceptual fusions and a "war of senses" which may be traced back to primal archetypes and irrational ideas. These conflicts largely unfold as a clash of secondary myths and different discourses, which correlate with diverse worldviews and alternative realities.

In the context of the global challenges and fundamental transformations that present-day civilization is undergoing, the interpretation of lingual, cultural, social and cognitive phenomena has acquired a new focus and a new quality. Present-day cognitive linguistics proposes an expanded consideration of traditional cognitive models (Forceville, 2012) or discusses the hierarchical structure of such models in an attempt to avoid certain terminological discrepancies (Kövecses, 2017). Meanwhile, phenomena of informational plane are addressed as verbally embodied, metaphysical logical construals of reality (Downing, 2002; Langan, 2018; Mize, 2020). This article follows the tendency of integrating the methodologies of various branches of linguistics (Manakin, 2007; Mizin, 2019; Terekhova, 2018). We deliberately employ a broader multidisciplinary approach towards language signs that materialize the aforementioned construals. Our interdisciplinary theory of myth-oriented semiosis (Kolesnyk, 2011) encompasses basic notions of cognitive linguistics (Lakoff & Johnson, 1990; Langaker, 1999), semiotics (Brier, 1999; Lotman, 2001), phenomenology (Cassedy, 1997; Husserl, 1982), the theory of fractals (Mandelbrot, 1982), the theory of systems (Bertalanffy, 1968; Capra, 1996), and a number of concepts pertaining to modal (Kripke, 1963)

and fuzzy logic (Zadeh, 1972). In this article, the previously identified cognitive models of myth-oriented semiosis (Kolesnyk, 2019) are regarded as mechanisms of irrational categorization that determine the mythic space's "inner morphology", while the focus of analysis is shifted towards the logic of their involvement in semiosis.

A large volume of lingually conveyed data is introduced into the planetary informational space on a regular basis via printed and electronically mediated texts and discourses which expand, diffuse, change or cancel the contours of allegedly "real" reality and states of affairs in respective worlds. Verbal construals of diverse genres and volume are responsible for the emergence of subcultures, behavioural models, the sustainment or degeneration of ethnic cultures etc.

Whether worlds as logical construals are a *belle lettres* fiction or political simulacra, they all follow the **universal pattern of initiating a certain state of affairs** within a conventional (i.e. "real" and accessible within certain interpretational coordinates) reality. This pattern correlates to the basic trajectories of language change (Lass, 1980). The pattern of world creation in fact appears to be a dynamic modification of the inchoative conceptual oxymoron ORDERED CHAOS. It is addressed in prior mythic traditions as structuring the initial unorganized matter (data, states, phenomena etc.) according to the models and intentions of the governing super-system. This pattern fits the arguably unlimited succession of energy-matter-information transformations. It unfolds in the following manner:

1. The **unorganized content** of **oblique space** is recognized by a super-system: *quem dixere chaos: rudis indigestaque moles* "[which] they called Chaos, a crude, confused mass" (Ovid, n.d., 1:7), *Terra autem erat inanis et vacua* [unorganized matter], *et tenebræ erant super faciem abyssi* [a fuzzily-contoured container]: *et spiritus Dei* [a configurative program imposed by a super-system] *ferebatur super aquas* [a primary element, container of resources] "Now the earth was formless and empty, darkness was over the surface of the deep, and the Spirit of God was hovering over the waters" (*Vulgate*, n.d., Gen 1:2);

2. This content **undergoes** a number of **procedures** performed by a "configurative subject / personified power": *Hanc deus et melior litem natura diremit* "intervened the god and more favourable natural powers" (Ovid, n.d., 1: 21), *Vix ita limitibus dissaepserat omnia certi* [delimitation and mapping] "He hardly separated all things within specific limits" (Ovid, n.d., 1: 69–70);

3. The construed system acquires definite features, as the **architecture** of the created world and its content appears to be a **fractal copy** of the super-system's structure (metaphorically, "*ad imaginem suam*"): *Et creavit Deus hominem ad imaginem suam: ad imaginem Dei creavit illum, masculum et feminam creavit eos* [specification] "God created mankind in his own image, in the image of God he created them; male and female he created them. (*Vulgate*, n.d., Gen 1:27). Further developments, known from the texts of a precedental nature, involve the restructuring, modification or destruction of the world [e.g. as a result of a DISASTER scenario].This pattern is extrapolated to the logic of verbal world modelling. Unorganized ("chaotic") meanings contained in the semiosphere are arranged by a language user (in a state of irrational inspiration or due to other pragmatic stimuli) into noematic clusters which "make sense" within the chosen interpretational coordinates, thus becoming "rational". We also extrapolate E. Husserl's "noema" (Husserl, 1982, pp. 225–245) to the products of human interpretational and semiotic activity. As an AR (alternative reality) is essentially a logical construal, it encompasses sets of contextually dependent fluid meanings. Noematic meanings and their clusters can be further modified, re-arranged or decomposed. We employ the universal CHAOS → ORDER → CHAOS → … fluctuation pattern as the basis of the proposed model of semantic transformations.

Considering the previously introduced theory of myth-oriented semiosis and the set of methodological principles of M-logic which relate to the processes of irrational categorization and the verbal representation of mythic (unreal, quasi-real, construed etc.) phenomena (Kolesnyk, 2017), this paper focus on the logical and cognitive procedures responsible for processing myth-related

information (R). Hence, an attempt is made to exemplify the logic of irrationally triggered categorization ("irrational rationalization" as a construction of a realistic/rational worldview around irrational axioms). Therefore, we propose a universal model for the creation of alternative realities (worldviews) that encompasses semantic transformations and the sequencing of cognitive procedures.

2 Short Notes on Methodology

The interpretations of semantic and conceptual transformations responsible for denoting states of affairs within logically possible worlds employ the "neo-anthropocentric" approach. This approach towards lingual, cognitive, social and cultural phenomena encompasses the following fundamentals:

- an eco-centric focus (tracing the lingually mediated phenomena's correspondence to the universal laws of nature) (Brier, 1999; Capra, 1996);
- non-linear causative logic (establishing multi-dimensional volumetric relations between phenomena, notions and semantics of language signs) (Smarandache, 1999);
- universal principles of open systems development (focusing on hierarchical correlations, compensatory mechanisms responsible for the sustainability of systems, dialectic balance between the entropic dynamics of systems and the tendency towards homeostasis etc.) (Minati & Pessa, 2002);
- multiple interpretational matrices (exercising "broadband analogue networking" based on the principle of gnoseological relativity (Gödel, 1949) i.e. identifying the synergetic interaction patterns common for systems of diverse etiology and traditionally tackled from specific scientific vantage points).
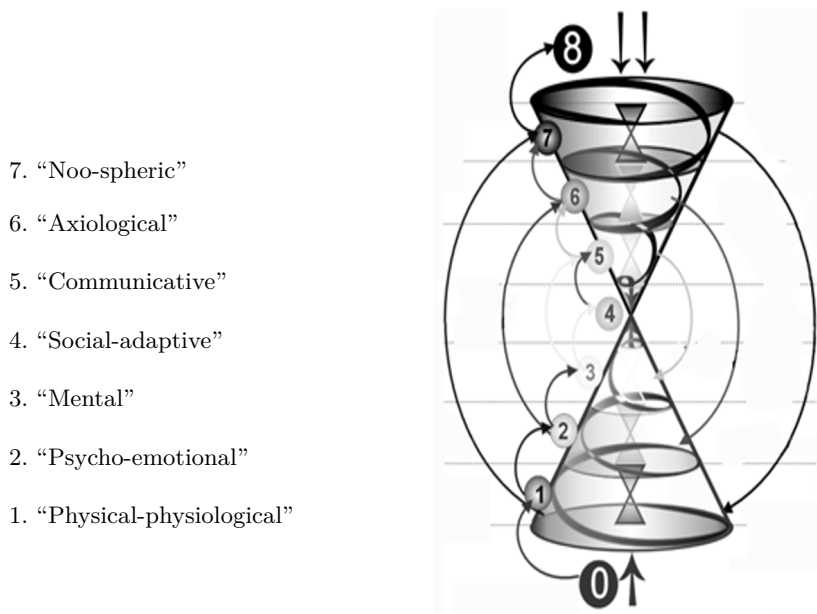
In this paper etymological analysis is used to reconstruct the primary code-ons responsible for the modelled world's initial configurative settings. By "primary code-ons" we understand the semantics of the Indo–European stems that iconically represent the arguably primal (or close to primal) characteristics of the denoted objects and phenomena. The reconstructed and synthetically inventorized quanta of semantic features contained in the inner form of the WORLD concept's names are identified as "nano myths", i.e. clipped "stories" of once relevant experience. These code-ons function as basic interpretative operators responsible for processing input informational signals and shaping noematic senses in specific contexts (Kolesnyk, 2011, pp. 168–209).

Elements of componential and comparative analyses were used to establish semantic peculiarities of language units denoting focal concepts included in the structure of the modelled world. Further interpretations of semantic features correlating with quanta of conceptualized information were conducted within the framework of the general laws of open system development: the law of polarity, the law of reiteration, the law of conservation, the law of cyclic development, the law of alternative choices, the law of hierarchic and synergetic development, and the law of conditionality. The semantic features are viewed as "attractors", "predictors" or "repellers" which impact the flow of bifurcations, thus shaping contextually relevant noematic senses.

All interpretations were conducted on the basis of the previously introduced universal model of open system structure (Kolesnyk, 2017). Considering the universal nature of causative relations between super-systems, systems and subsystems, we apply this model to: (a) the structure of the language system and potential lingual signs); (b) verbal construals pertaining to the "activated" state of the system; (c) existential modes of a language user (Figure 1).

Thus the model represents:

- 1 — the level of material "elementary particles", phonetic ( ); "technological" or physical-acoustic (b); physical-physiological (c);
- 2 — the level of elementary meanings, morpho-phonemic (a); "appellative" or graphic-iconic (b); psycho-emotional (c);

7. "Noo-spheric"

6. "Axiological"

5. "Communicative"

4. "Social-adaptive"

3. "Mental"

2. "Psycho-emotional"

1. "Physical-physiological"

Figure 1. Hierarchical structure of an open system.

3 — the level of usual ("default") meanings, lexical (a); "operational" or symbolic (b); mental-analytical (c);

4 — the level of variable ("fuzzy") meanings, phrasal (a); "compositional" or level of modifying and "quantoring" the senses (b); social-adaptive (c);

5 — the syntactic level (a); "interactional" or level of intersystemic senses' transmission (b); inter-group, communicational (c);

6 — the textual/discourse level (a); "orientation" or worldview-configurative (b); axiological (c);

7 — the semiospheric level (a); worldview-interactional, conceptual (b); "noo-spheric" (c).

The model reflects different types of systemic relations between phenomena pertaining to each level, namely:

1. progressive-modificational (from level 1 to level 7);
2. determinative-regulative (from level 7 to level 1, each hierarchically higher level (subsystem) being a governing operator for the hierarchically lower one);
3. symmetric determinative-causative as in correlations of level 7 → level 1 (an "input program" attracts adequate material resources), level 6 → level 2 (axiological navigational coordinates trigger comfortable "emotional" states of a system), level 5 → level 3 (the peculiarities of inter-systemic relations determine the "mental" activities of each participant), while level 4 represents a transitional plane of an otherwise complete system.

This model has been expanded to demonstrate the logic of semantic transformations and respective mental operations (steps, further addressed as "interfunctions")

3   Discussion

3.1   A Possible World as an "Alternative Reality"

We view a "world" and its respective "worldview" as a holistic system comprising natural, social and solely anthropic phenomena represented in one's available experience, limited by current

knowledge and humans' cognitive abilities. Both from the viewpoint of the classic anthropocentric approach and, even more so, in the ecologically-vectored neo-anthropocentric focus, a world appears to be a variable product of interpretations structured around a set of fundamental senses (i.e. basic irrational interpretative operators embedded in the "mythic space" or secondary mythology). Generally, the whole multitude of possible ("true" or "false") worlds (κ), (Kripke, 1963) is correlated with the number of persons (ψ), who exist in a world (H) and reflect (R) on the states of affairs in it. In a modal-logical sense, a $H_1 R H_2$ construal indicates that the world H_2 is possible in regard to the world H_1, while each statement which is true in $H2$ is possible in H_1. In this case, $\psi(H)$ is not necessarily identical (quantitatively and qualitatively) in all possible H_n. Therefore a "true" state of affairs in a construed world H' can be modelled as a "logical expansion" of the state of affairs in the world H by interpreters whose own features do not necessarily fit the logic of the world H. Hence, "possible worlds" appear to be the descriptions of states or a multitude of alternative "states" represented via judgments that are conducted through the prism of certain individually relevant concepts (Carnap, 1947).

Within the framework of epistemic logic, diverse modalities (those of hope, belief, expectation, wish etc.) are generally correlated with regulatory propositions which function as categorization operators. As the features of a possible world H' depend on the interpreter's (a) knowledge (subjective, fragmented, contextual, biased and always modal) of both "primary reality" H and its preferred image H', the amount of inferential knowledge about the latter is virtually unlimited. In other worlds, a world H actually becomes a multitude of H' epistemic a-alternatives (Hintikka, 1989) that are relative, variable and dynamic. Respective states of affairs in H' result from possible trajectories of the unfolding of events', so creating different alternative realities (AR).

The diversity of the aforementioned variants of reality is determined by the dynamics of the systems of different etiology (functioning "objectively" out of the interpreter's scope of attention yet still according to the patterns of open system development), the volume of knowledge regarding these systems, and the implemented ways of processing information. Mental images of the world (worldviews) generated on the basis of processing signals obtained via a number of channels and their possible verbal manifestations are always late in following the transformations of the "primary real world". On the other hand, intentionally projected ARs are a step ahead of the developments occurring in the empirically accessible "primary reality". In both cases, the "primary reality" and its conceptual and verbal counterparts are not exact copies of each other. They constitute a "stream of possibilities" with a variable range which provides space for the a-alternatives' material representations via different codes. The whole range of worlds' variants, existing as alternatives within or outside logical perspective and construed or explained on the basis of irrational (i.e. mythic) axioms, constitutes a "mythic multiverse".

3.2   "Basic Operators" of Myth-Oriented Verbal World Modelling

The fundamental mechanism of the verbal creation of an AR is fluid noemo-genesis. This involves the generation of contextually and pragmatically relevant senses and clusters of senses which emerge as a result of the reflection and interpretation of the secondary designation units denoting the contours of the world (place names, locales' descriptions), the sets of focal concepts (anthropomorphic and mythic beings, deities, values, artifacts, powers etc.) and defining the trajectories of the world's or the contrarily configured realities' development. Noemo-genesis is based on myth-oriented semiosis, i.e. the designation of a real or unreal object of reference motivated by the content of the mythic space's components. For instance, depending on the choice of the lingual code, designations of the WORLD are irrationally motivated by the "clipped textual programs" (primary mythic "code-ons") associated with the semantics of the Indo–European stems:

1. "Space occupied by humans [during their life-time]" or, in a more abstract sense, "space occupied by a sustainable system containing energy and capable of multiplication": O.E. *woruld*, *worold* "man's age, deeds of life", "period of time", E. *world*, O.Sax. *werold*, O.Fris. *warld*,

M.Dut. *wērelt*, *werlt*, Dut. *wereld*, O.N. *verold*, O.H.G. *weralt*, M.L.G. *werlt*, *werlde*, G. *Welt*, Sw. *värld* < Germ. **weraldi-* < Protogerm. **wer* "man" (Germ. **wera-* "human, man"< **wira-* (O.Ind. *vīráh* "man") < I.E. **u̯iros* "man", "strong, powerful" < **u̯ei-*, **u̯eiə-* "to separate", "strong") + **ald* "age" (<I.E. **al-* (2) "to grow, feed") (cf. Gr. κοσμος "order, ordered space", Goth. *manaseþs* "man's family") (DWDS, n.d.; OED, n.d.).

2. "Space of settlement", what is "known, comfortable and safe" that triggers positive associations of genetic proximity (energy resonance between a system and a locale): O.N. *heimr* "home, world", Goth. *haims* "settlement", Norw. *haim*, Sw. *hem*, Dan. *hjem*, O.E. *hām*, E. *home*, O.Fris. *hēm*, O.Sax. *hēm*, M.Dut. *heem*, *heim*, Dut. *heem*, M.L.G. *hēm(e)*, O.H.G. *heima*, M.H.G. *heim* "home, family, fatherland", G. *Heim* < Protogerm. **haima-n*, **haima-z*, **haimi-z* (**haim-s*) "village, home, family" < I.E. **kōim-* < Proto I.E. **kōim-* "settlement"; cf. Proto Balt. **keĩm-a-*, **kaĩm-a-* m., **kaĩm-ã* "yard", Lith. *kiẽmas* "yard", *káima-s*, *káima* "rural space", *kaĩmenē* "hearth", Latv. *cìems* "village, house, settlement", O.Prus. *caymis* "village" (Levitskiǐ, 2010, p. 238).

3. "Earth [as an expansion of settlement] and its respective element", while "the element" could be metaphorically interpreted as a specific type of energy generated by particles' kinetic interaction and representing the resources necessary for executing the program set by the supersystem (Gods, Fate, Sacral Sphere): E. *earth*, O.E. *eorðe*, G. *Erde*, O.H.G. *Erda*, Dut. *aarde*, O.N. *ertha*, O.Fris. *erthe*, Sw. *jord*, O.Icel. *jorð*, Goth. *airþa* < Germ. **erþo* < I.E. **ert* < I.E. *er-*, *ar-* "move" (cf. O.Ind. *r̥tĭ-* "hit, attack", Avest. *-ərəti* "power" (Pokorny, 1959, p. 327). As an "enclosed safe space" the world thus becomes "a container of energy" and a "middle settlement": *Áðr Burs synir // bjöðum of ypptu //, þeir er Miðgarð mæran skópu* "until Bor's sons lifted the soil, those who created the glorious Midgard" (*Völuspá*, n.d., 5), *þæt ænig oðer man // æfre mærða þon ma middangeardes* "that anybody [could achieve] more in this middle earth" (Beowulf, n.d., 503).

4. As a known and safe space, the world becomes "accessible for observation" i.e. "an accentuated profile" which is metonymically processed as "light": Ukr. *світ*, Pol. *świat*, Chec. *svět*, Slvk. *svet*, Bulg. *свят*, Srb. *свет*, *свȕjem*, Slvn. *svetel*, O.Slav. *свѣтъ*, Proto Slav. *světъ* (cf. Lith. *švytėti*, O.Ind. *svētah*, *svitrah*, Avest. *spaēta*, Goth. *hviets*, O.H.G. *hwig*, G. *weiss*, Lat. *vitrum* < (?) I.E. **kueit-/*kuoit-* (ESU, 2005, pp. 196–197; Pokorny, 1959, pp. 628–629). Assuming the nature of light is a stream of photons, the world in a more abstract sense appears to be "a dynamic non-rigidly structured set of mentally processed [known] phenomena".

5. The dialectic nature of the world as a dynamic system could be reflected in the following reconstructions. The world can be "pleasant [due to being ordered]": Rus. *мир* "world, people, peace", Bulg. *мир* "world, peace, calmness", Slvn. *mîr*, Chec. *mír*, Pol. *mir*, probably borrowed from Proto Slov. **mi-rъ-* "light" (ES, 1992, p. 57) (cf. Lith. *mieras*, Latv. *miêrs*, Alb. *mierë* "nice", O.Ind. *mitrás* "friend" (Vasmer, 1955, p. 626). A hypothetic assumption of **mi-rъ/*milъ-* < **mei-* "to bind" (ES, 1992, p. 56) allows the interpretation of "to light → to order [make nice]". On the other hand, the connection of **mirъ* to I.E. ** mer-* (2) "to shimmer", **mer( )k-* "glimmer" (Pokorny, 1959, p. 734) (Rus. *мерцать*, Ukr. *мерехтіти*, *марево* (Pokorny, 1959, p. 733) i.e. "fuzzy, unclear" allows one to relate this kind of "light" to either morning or twilight (Goth. *maurgins*, O.Icel. *myrginn*, O.Sax. *mergen*, O.H.G. *morgan* "morning") or even to darkness, cf. Slov. **mъrknoti*, O.Slav. *mъrknoti*, Srb. *mrknuti*, Rus. *меркнуть* "to get darker", Ukr. *морок* "darkness", *присмерк* "twilight", Slvk. *mrk* "cloud" (Levitskiǐ, 2010, p. 397; Pokorny, 1959, p. 734), thus identifying **mirъ* as "un-world". Moreover, due to the polysemantic nature of **mer-*, *mer-* (4) "to die" (Pokorny, 1959, p. 735) (Rus. *умирать* "to die", *замирать* "to become still", Ukr. *помирати* "to die"; cf. G. *Mord*, Fr. *meurtre*, Sp. *muerte* "murder", i.e. "imposed cancelation of a system's activities"; Sp. *muerte*, It. *morte*, Fr. *mort* "death") the world denoted as **mirъ* appears to be conceptualized as "absolute calm", i.e. a comfortably ordered yet static and likely closed system, an "un-world" or an egregor that fails to develop as it exhausts its resources.

6. "Sphere of [living systems'] existence": Gael. *bith*, Ir., O.Ir. *bith*, Wel. *byd*, Beth. *bed*, "world, being" < **bitu-* < *bi, bei* < I.E. **gei-*, *gi-* "to live" (cf. Lat. *vivo*, E. *be*) (McBain, 1911, p. 38). Features 6, 7 and 8 are typological parallels to those from the Germanic languages.

7. "Known space": Gael. *saoghal*, "world, age, life", Ir. *saoghal*, O.Ir. *saigul, saegul* < (?) Lat. *sæcŭlum* "age" < **sai-* "race, time, age" (McBain, 1911, p. 302); or < (?) *sāg-* "to seek" (Pokorny, 1959, p. 876). The hypothetic proximity of the two stems allows for speculation about the world (space) unfolding in time while being experienced (learnt about).

8. "Unknown space": Gael. *domhan* "world, universe", Ir., O.Ir. *domun* < Celt. ** dubno-* "deep" (typologically as Ukr. *дно* "bottom", E. *deep*) (McBain, 1911, p. 139), i.e. "immersed, hidden", probably connected to the elements of EARTH and WATER.

9. Designations like Fr. *monde*, It. *mondo*, Sp. *mundo* < Lat. *mundus* "world, earth" and "decoration" allow ambivalent interpretations. If Lat. *mundus* ∼ Germ. *mund-* (2)/*minþ-* "mind" < Germ. **mun-* "to think" (cf. E. *mundane* "earthly", O.E. *gemynd* "mind") the world again appears to be a "known [considered] space". If Lat. *mundus* ∼ E. *mouth*, O.E. *muð*, G. *Mund*, O.H.G. *mund*, Dut. *mond*, O.Sax., O.Fris. *muth*, Sw. *mun*, O.Icel. *munnr*, Goth. *munþs* "mouth" < **munþ-*, (I.E. etymology is unknown, though a possible connection is that to I.E. **men-* "stand out", "mouth", "neck", "nape" (Levitskiĭ, 2010, p. 396). At the same time *mundus* could be related to I.E. **meu-*, *meu-* "wet, rotten; to moisture", or to the extended stem **meu-d-* "lively, sprightly" (Pokorny, 1959, p. 741). Associating "wetness" and "mouth", alludes to the inherent property of all living systems whose material bodies feature a carbon-based protein structure and employ the liquid state of matter for energy exchange, metabolism and genetic transmission. Considering Gael. *mionn* "oath" ("a speech act fulfilled by using one's mouth"), Ir. *mionn, mind* "oath"/"decoration, necklace", O.Wel. *Minn*, O.H.G. *menni* "necklace", O.Sax. *mene* "neck chain", Lat. *monile* , Ukr. *намисто*, (dialect) *монисто* "necklace" (McBain, 1911, p. 250) allows extending the interpretation of **meu-* as "an act of ordering where an oath is a program [sounds] executed via the configurative resonator [mouth]" thus turning the world as mundus into a "generative system".

The reconstructed senses of "populated [over humans' life-time span]", "capable of expanding", "dynamic", "connected to earth/territory", "ordered → safe" with a systemic error of "safe ← calm, stable" comprise the content of the BASIC OPERATOR (quantor) $Q|x00|$ — an irrational inchoative axiom (configurative nano-myth) used as an interpretational filter in processing information about spaces, objects and worlds, and generating lingual construals denoting alternative states of affairs.

Further verbal construing of alternative realities requires arranging the processed ("quantored") senses in referential, axiological, deontic and alethic dimensions. The REFERENTIAL MODALITY of an alternative world presupposes verbal representations of the focal concepts that outline the world's contours and states of affairs within them, i.e. designating the world's constituents' ontological (a), functional (b) and temporal-locative (d) parameters. The AXIOLOGICAL MODALITY of an AR defines the vector of its development and the character of its interaction with differently configured worlds. It impacts the world via designating value-concepts or accentuating the axiological features (c) of the above mentioned world's constituents. The DEONTIC MODALITY of a construed world manifests itself through such verbalized quest-like scenarios as are "allowed" or "denied" within the system's architecture. Such scenarios follow non-linear causative-consecutive logic and aim at either sustaining or changing states of affairs in the world. The ALETHIC MODALITY of a world highlights the degree of its "reality" from the standpoint of its creator, its primary agents and possible observers (addressees of a lingual construal).

A linear representation of the structure of a myth-based alternative world employs the logic used to describe fuzzy entities. For instance, a fuzzy informational cluster A (all objects with verbally represented ontological features) comprises pairs of conceptualized features that mark segments (h) of the respective conceptual domain (H) as profiled to a degree ranging from 0 to 1:

$$A = (h1, 0.4), (h2, 0.3), (h3, 1), (h4, 0.6).$$

This fuzzy cluster is expressed as a membership function $\mu A(x)$, in this case $\mu A(h)$, thus marking the degree of a domain segment's $(h\#)$ involvement $[0,1]$ in a particular possible world (Zadeh, 1972):

$$A = \{(h, \mu A(h))|h \in H\}.$$

Respective notations are made for the construed objects' ontological (a), functional (b) and temporal-locative parameters (d), and its axiological features (c). The interpretational focus is regarded as a scope of vantage points highlighted within a range determined by the aforementioned modalities, rather than as a stable "prism". We therefore mark the dynamics of the coordinate systems that shape each fuzzy informational set $\triangle$. The final configuration of each set is also impacted by the basic interpretational operator-quantor $Q|x00|$, where $x00$ represents propositionally encoded primary conceptualized features of an object/phenomenon (the names of the WORLD (W), considering the provided example). Thus a construed AR appears as:

$$W = \sum \triangle\{(h, \mu A(h))|h \in H\}/Q|x00|, \triangle\{(h, \mu B(h))|h \in H\}/Q|x00|,$$
$$\triangle\{(h, \mu C(h))|h \in H\}/Q|x00|, \triangle\{(h, \mu D(h))|h \in H\}/Q|x00|$$

This notation implicates that the number of verbally created ARs is virtually infinite while their configuration depends on variable streams of input signals, variable systems of interpretational coordinates, and variable pragmatic (cultural, subcultural, professional, worldview related) "filters" of categorization and designation. Consequently, the same physical time-space plane could be occupied by diverse alternative realities which, according to their configurational settings, overlap, come into conflict or "ignore" each other.

3.3 Myth-Oriented Semiosis: Procedural Logic and the Typology of Worlds

A verbally created AR manifests the duality of its nature, being both mental-conceptual and material-verbal. The verbal modelling of an AR therefore unfolds as sequences of designation acts occurring within larger bodies of texts or discourse pertaining to knowledge or experience of real or imagined states of affairs. The cognitive premises of these designation acts encompass the universal pattern of processing information, i.e. recurrent mapping of the incoming signals against fragments of previously conceptualized experience along the trajectory defined by a number of axiomatic (thus irrational, pertaining to a certain myth) inchoative operators.

In a strictly linguistic understanding, verbal modelling may be regarded as the generation of contextually relevant noematic senses resulting from semantic transformations occurring in the designation acts. In this case, semantic transformations are associated with a number of mental procedures responsible for creating dynamic conceptual profiles of both universal and ethnically specific mythic concepts. We regard language units involved in the designation acts as manifestations of irrational categorization (irrational rationalization in particular). They emerge and function as a result of myth-oriented semiosis, its pragmatics being driven by irrational axiomatic incentives and its direction being largely determined by the properties of the lingual code's units. Any language unit as a sign, i.e. a combination of a material "carrier" and informational content exists and functions as a complex of an auditory image, a visual image, an articulatory image and a graphic one. It provides entry to a number of areas of the brain (conventionally localized yet in fact interconnected via the synesthesic multi-alignment and resonance of synaptic receptors), as well as their compensatory and sustainable functioning (Squire & Berg, 2008; Vekker, 1998). This multivectored architecture of mind is responsible for the cognitive mechanisms involved in categorizing the world or in creating alternative realities. Recognizing iconicity as the intrinsic property of language signs, we regard designation units of diverse structure denoting myth-related phenomena as iconic (isomorphic) representations of fundamental energy-information interactions, in particular those occurring in the central nervous system of a language user. Primary "programs"

of systems' interactions iconically encoded in the designations units' inner form are reconstructed via etymological analysis and cross-lingual generalizations. Thus, lingual designations of mythic phenomena and mythic concepts function as basic operators introducing categorization patterns. While myth-related phenomena, as well as their conceptual counterparts constituting the "mythic space" (MS) of national worldviews, mostly pertain to the sphere of "sacred", "sacral", "magic" and are hence rationally incomprehensible, their verbal representations are associated with the impact of the informational super-system which is understood as a set of universal laws of nature and algorithms of systemic interactions.

The peculiarities of an alternative world's generation, configuration, and development depend on its passing through bifurcation points. At these points the world as a system (or the system's creator, $\psi(H)$, language user) chooses the vector, strategies and tactics of development. This choice is to a large degree enigmatic, i.e. irrational, motivated by the super-system's program and previous conceptualized axiomatic experience encoded in $Q|x00|$. Thus, creating or configuring an alternative world (or its segment, H_1RH_2, in Kripke's terms) occurs as a sequence of relatively standard operations:

$$\forall \, SCEN(x)^n [SCEN(x)^{n+1}...][SCEN(x)^{-n}...][SCEN(x)n'...]$$
$$IN \, x(R/M) \sum a_n b_n c_n d_n$$
$$trans(\delta\varepsilon/MSa_{X00}b_{X00}c_{X00}d_{X00})$$
$$OUT$$
$$\mu(x)^n \mu(x)^{n+1} \mu(x)^{-n}$$
$$\exists \, SCEN\triangle(x)^n [SCEN\triangle(x)^{n+1}...][SCEN\triangle(x)^{-n}...][SCEN\triangle(x)n'...]$$
$$IN \, x(R/M) \sum a_? b_? c_? d_?$$
$$trans(\delta\varepsilon/MSa_{X00}b_{X00}c_{X00}d_{X00})$$
$$OUT$$
$$\mu(x)^? \mu(x)^{?+1} \mu(x)^{-?}$$

— for each scenario (SCEN), being either progressive $(n+1)$ or inverted $(-n)$ and involving an object (x) that exists in a shape of (manifested to a degree of) (n), in which a certain informational quantum representing prior knowledge of the object x's ontological (a), functional (b) and temporal-locative parameters (d), axiological features (c) in a real (R) or imagined (mythic, fictional — M) plane undergoes transformation $(trans)$ under the impact of an energy-informational influx (input signals $\triangle\varepsilon$) and the content of the irrational mythic operators $(MSa_{X00}b_{X00}c_{X00}d_{X00})$ defining the prototype parameters of (x) and results (OUT) into the genesis of lingually mediated noematic senses $\mu(x)^n, \mu(x)^{n+1}$, or $\mu(x)^{-n}$, there exists a virtually unlimited number of transformational scenarios $SCEN\triangle(x)^n$ resulting in the rise of unexpected and fuzzy configurations of noematic senses and their clusters $\mu(x)^? \mu(x)^{?+1} \mu(x)^{-?}$ correlating to states of affairs in verbally modelled realities $(H_2, H_n...)$. The transitions towards $\mu(x)^? / \mu(x)^{?+1} / \mu(x)^{-?}$ in the which structure (H_n) is determined by (R), are addressed in section 3.4 of this paper.

Each AR may be regarded as a "subversum", a constituent of a constellation of worlds. Each subversum fractally copies the super-systems' architecture and functions according to the universal laws of nature and patterns of open system development. We have established the typological characteristics of each subversum (H_n) according to the profiled system-configurative properties. The taxonomy of worlds in the REFERENTIAL-HIERARCHICAL PLANE employs the model of open system development (Figure 1). This model reflects a world's potential level affiliation, demonstrathetes progressive vector of its evolution, the causative-consecutive symmetry of respective sub-systems' relations, and the world's "valency" in regard to a regulating super-system. Thus, verbally construed ARs appear as:

1. Physical worlds with different configurations that depend upon the presence or absence of certain material objects and the change of the contours of empirically accessible space, e.g.: *I have seen the transformation wrought on the world by the invention of the steam engine…* (Clare, 2013, p. 192), *The Master-Ring, the One Ring to rule them all* (Tolkien, 2000a, p. 75). In a broader sense, an alternative world arises due to physically unfolding or verbally addressed significant changes in the structure of matter or energy exchanges that are not necessarily registered at the basic level of perception and conceptualization (be it the solar system crossing the galaxy's axis and the world's inversive reorientation or a change in a hydrogen atom's molecular weight that modifies the essence of all organic compounds).

2. Worlds generated at a bifurcation point where certain scenarios are driven by emotional outbursts or changes of emotional states. Thus, states of affairs could be modified due to the scenario of VENGEANCE which is driven by emotion: *Vön geng ek vilja // vers ok beggja, // verð ek mik gæla // af grimmum hug* "I have neither a man nor delight; I shall work myself happiness out of anger" (*Sigurðarkviða*, n.d., 9): *Nam af þeim heiptum hvetjask at vígi* "Out of anger/hatred [she] plotted murder" (*Sigurðarkviða*, n.d., 10).

3. Worlds generated via mental activities (judgments, interpreting fundamental notions, modelling states of affairs during magic practices), e.g.: *Warlocks throughout the ages have dreamed up and perfected different spells to make themselves a different world* (Clare, 2013, p. 192).

4. Worlds emerging due to a system entering certain social relations and are structured around a social group with its institutions and culture determined by their members' peculiar features: e.g: *About our world. I mean, your world. My world. Your parents' world.* (Rowling, 1999, p. 50), *'Harry — yer a wizard'* (Rowling, 1999, p. 50).

5. Worlds as the results of inter-group interactions:, e.g. *Fleygði Óðinn // ok í folk of skaut, // þat var enn folkvíg // fyrst í heimi* "at the army Odin threw a spear, that's how the war began, the first one in the world" (*Völuspá*, n.d., 24), where the scenario of WAR unfolding in the SACRAL SPHERE is fractally projected onto a number of sub-systemic planes and turns into a basic scenario of human interactions.

6. Worlds that transform due to the choice of axiological "navigational markers", e.g.: [*Theoden*] *the battle-fury of his fathers ran like new fire in his veins, and he was… like a god of old, even as Orom the Great in the Battle of the Valar when the world was young* (Tolkien, 2000c, p. 124), where axiologically coloured concepts of LOYALTY, RESPONSIBILITY, GLORY, VALOUR etc. driving the KING's behavior impact the flow of the BATTLE scenario which define the world's future configuration.

7. Worlds emerging as a result of large-scale civilizational upheavals, e g.: *To, że po Koniunkcji Sfer ludzie nauczyli posługiwać się magią, jest przekleństwem i zgubą świata. Zgubą ludzkości.* "[The fact that] after the Conjunction of Spheres people learned to use magic is a curse and the doom of the world. The demise of mankind" (Sapkowski, 1994, p. 257), where the world's new configuration and a new civilizational model are determined by a fundamental inversion of the basic principles of energy-matter exchange and the shifts in respective conceptual and language worldviews.

In regard to the DEONTIC MODALITY of alternative worlds, and considering the peculiarities of their subjects' worldview types and prototype activities, the typology appears as follows:

1. MYTHIC WORLDS with an inchoative axiomatic matrix correlated with the systems' empirically inaccessible and non-verifiable primary states, e.g.: *Níu man ek heima, níu íviðjur, mjötvið mæran, fyr mold neðan* "nine worlds I remember, nine roots and the tree of the measure that had not yet grown" (*Völuspá*, n.d., 2), *Pan vei veint byt* "before the world's limits were set" (*Cad Goddeu*, n.d., 177).

2. RELIGIOUS WORLDS construed on the basis of the secondary mythology "borrowed" from the mythic space: *In principio creavit Deus cælum et terram* "In the beginning the God created heavens and earth" (*Vulgate*, n.d., Gen 1:1).

3. Ideological worlds as construals created on the basis of the axiological myths of specific doctrines (totalitarian, liberal etc., introduced in respective discourse genres).

4. Ideo-ethnic worlds comprising basic concepts of naïve ethnic worldviews as well as stereotypic patterns of categorization and systems' interaction within the accessible time-space plane. Somewhat similar to these are *profane worlds* limited by a number of basic concepts and conscious/unconscious needs allowing a person to fit into a group and lead a certain way of life deprived of ethnic identity.

5. Subcultural worlds construed on the basis of a number of relevant concepts, e.g.: *The gods made heavy metal and they saw that it was good* (Manowar, 1996), where the music genre is associated with the way of life, behaviour and specific values.

6. Gaming worlds comprising conventional sets of roles explicated in the texts of rule-books or game-masters' discourse that employ descriptors of locales, artefacts and worlds' inhabitants, as well as prescriptors outlining the rules of the subjects' interactions within the modelled reality. These language-mediated worlds have real-time counterparts as they provide space for "live action role playing" (LARP-gaming), board-gaming discourse interaction, or electronic gaming.

7. Textual worlds as temporary multi-level mental construals determined by readers' "immersion" into the semantic field of feature texts intensified by stylistic devices which provide reference to relevant "precedent" texts, cultural phenomena, and value concepts.

In regard to the alethic modality of worlds we can identify:

1. Real ("realistic") worlds as their architecture and functioning patterns comply with conventional axioms of common sense, while most of concepts within their structure are supported by empirical experience.

2. Quasi-real worlds that are correlated with the semiotically (verbally) represented experience of communities and ethnic groups' culturally relevant yet empirically unsupported prior experience.

3. Unreal worlds as solely individual mental construals. We can also identify fake worlds as unreal realities, intentionally construed manipulative signalling systems which create illusory images of a world and provoke certain behavioural patterns. Verbally materialized features and parameters of fake worlds do not comply with either common sense or empirical data (cf. popular media fakes about "two slaves as a reward for Ukrainian war veterans" as a part of hostile hybrid war propaganda or "USD 4K salary for high school teachers" as a part of 2019 Ukrainian presidential election campaign propaganda).

Verbally mediated worlds are regarded as informational structures clustered around certain mythic axioms. These axiomatic operators function as attractors and predictors, thus defining the nature and basic configuration of the worlds. Such worlds encompass conceptualized phenomena of diverse etiology, ranging from physical objects to "non-referential" entities (empirically inaccessible and experimentally non-verifiable, hence contributing to the fundamental irrational quality of the rationally modelled conceptual structures). The irrational rationalization of construed alternative realities is primarily determined by the anthropic factor: it is human categorization and designation activities that turn alternative realities into possible worlds.

The worlds' further development unfolds as either their "expansion" or "contraction" due to the increase or decrease in the volume of their structural components, as they import new segments or delete obsolete/dysfunctional ones. Apart from the worlds' "progressive development", these transformations can result in the worlds' structural inversion, annihilation or merging. These transformations occur at each level of categorization and involve a number of specific procedures.

3.4 The Procedural Anatomy of Myth-Oriented Semiosis

When speaking of cognitive structures as the premises of mythic concepts' designations, we may now expand our speculations towards a general (worldview level) model of verbalizing larger

volumes of conceptualized data. The universalia-oriented logic of this model and the aforementioned structures' correlations are defined according to the laws of dialectics and the general patterns of open systems' sustainable functioning. A number of terms describing complex system assembly are extrapolated to the designation procedures, for the nature of a verbally mediated AR is that of a complex systemic construal.

The proposed model (Figure 2) demonstrates the static hierarchical structure of a complete sustainable open system (a 7-level structure applicable to a world, a language, a social group, an informational field, an artifact etc.) encompassing fractally organized subsystems and being governed by a fractally organized super-system. The synergetic plane of the model features two basic relatively consequent, progressive-cyclic phases (Langan, 2018; Lass, 1980) outlining the system's basic fluctuations. These fluctuations concern successive transitions of irrationally motivated mental construals towards verbal representations that undergo further processing and constitute secondary axiomatic conceptual networks.
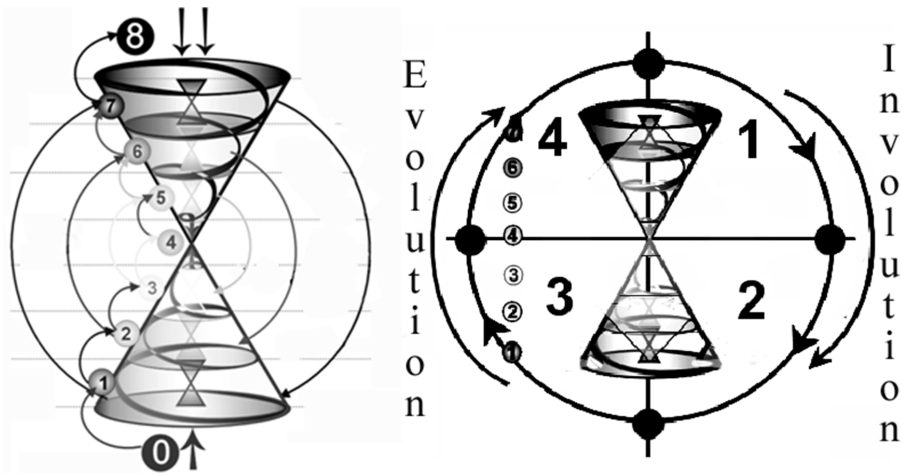
Figure 2. Phases and stages of verbal modelling.

The "involution" and "evolution" phases of a system's development correlate with its hierarchical structure. Apart from the hierarchical allocation, the levels of the proposed universal model indicate the vector of the system's (world, subversum, lingual construal, etc.) development and either its inward (auto-targetted) or outward (intersystemic) orientation.

The phase of "involution" (stages 1–2, "steps" I–VII in Figure 3) demonstrates the verbal representation of focal mythic concepts, chosen according to certain pragmatic incentives, and conceptual clusters responsible for the default configuration of the modelled reality. The phase of "evolution" (stages 3–4, "steps" VIII–XII) reflects the secondary processing ("precision tuning") of signals obtained via observing the verbally created states of affairs at stage 1. The "evolution" phase results in the semantic transformation of designation units, shifts in the content and arrangement of concepts, variations in the structure and trajectories of respective scenarios, and the entry of such language units into larger bulks of text and discourse.

Each phase of a system's development comprises sets of dialectically successive stages, sequenced by "circular causality" (Capra, 1996, pp. 56–59). At stage 1 ("shape-moulding"), a basic (mythic) operator (a mythic concept), together with other focal concepts, are chosen and associated with possible sets of morpho-phonemic and lexical "code-ons" which suggest primary "programs" for further interpretations and outline the contours of conceptual domains and respective semantic fields as constituents of worlds.

At the "interaction stage" 2, clusters of scenarios connected by the universal "quest-like" causative logic are verbalized by designation units of the syntactic and micro-textual levels. These lingual construals reflect changes in the states of affairs within the worlds as open or closed systems, as well as the consequences of the worlds' interactions with other realities. Their semantics undergoes contextual modification and eventually turns into "situational semantic quanta", i.e. noematic senses correlating to the content of specific verbalized scenarios.

At the "management stage" 3, a modelled AR fits into the multiverse represented in the semiosphere. It turns into a linguo-cultural phenomenon, impacts large numbers of addressees while its own phrasally, syntactically and textually embodied components acquire features of secondary mythic operators. The latter are employed in subordinate conceptualization, extend their own semantics and are capable of impacting states of affairs in synchronically accessible worldviews via advertisements, and political, academic, religious and gaming discourse, etc.

At the "synthesis stage" 4, an AR turns into a "precedent phenomenon" or an "assembly focus" that encompasses lingual and extralingual information pertaining to diachronically and generically distanced fragments of noosphere. A multi-level non-linear informational synthesis results in the emergence of subcultures, new communicative patterns, changes in lingual codes and the designing of artificial languages, and secondary and tertiary mythologies (as the designators of the primary myth turn into the triggers that activate allusive connections between diverse planes of reality/possible worlds).

Finally, the "micro-dimension" of the myth-oriented semiosis is represented by causatively and complimentarily connected "interfunctions" that fit the aforementioned phases and stages as "technological steps" (Figure 3). An "interfunction" is a relatively stable set of analytical and synthetic mental procedures, such as scanning, mapping, contraposition, juxtaposition, merging, inverting, realigning, profiling, projecting etc. (related to the excitation or inhibition of the nervous system, and the peculiarities of electrical fluctuations and protein synthesis within neuronal networks) (Squire & Berg, 2008), as well as specific cognitive operations involved in semiotic activities (traditionally addressed as cognitive metaphors, metonymies, allusions, oxymorons, metaphtonymies and inversions) (Kolesnyk, 2019).
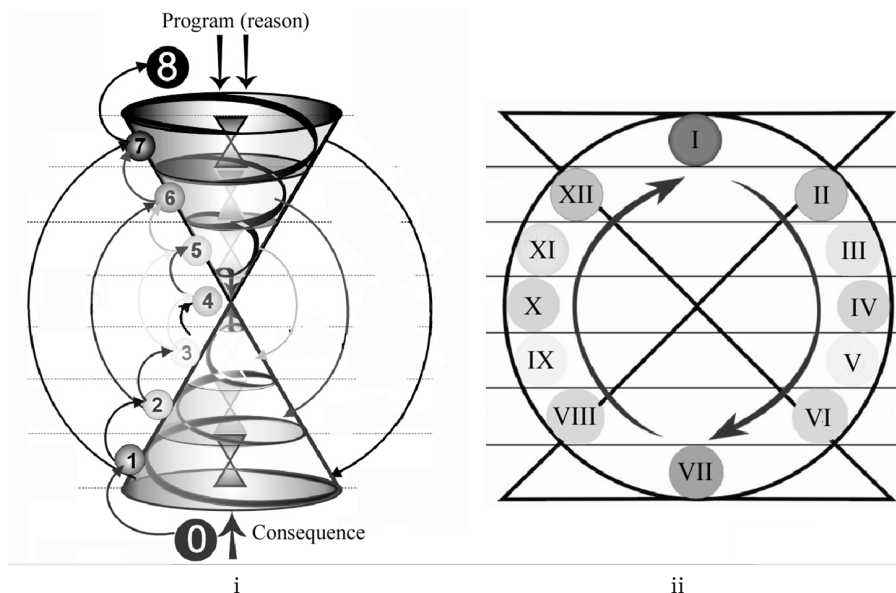
Figure 3. Conceptual model of myth-oriented semiosis: i — hierarchy of language units and construals; ii — steps-interfunctions of noemo-genesis.

Considering the procedural isomorphism (in fact, fractality) of semiotic mechanisms involved at the level of a discrete designation unit and at the level of textual world-modelling, we may identify the following universal operational steps (interfunctions, responsible for effective (R) by $\psi(H)$) of myth-oriented semiosis. The proposed names of interfunctions are metaphoric and accentuate the analogy with the process of "product assembly":

Table 1. Procedural steps of myth-oriented semiosis / world modelling.

Procedure (interfunction as a logical operation)	Designation act	World-modelling act
I. "Planning and motivation" (allusive mapping, associative synthesis)	Irrational choice of a language sign's motivational basis (allusive reference to a "nano-myth" encoded in the inner form of an inchoative I.E. stem)	Irrational choice of a basic operator (mythic concept) carried out via intuitive "broad-band scanning" of possible (culturally relevant and potentially recognizable) conceptual dichotomies inbuilt in prior experience and respective worldviews as polar markers of a modelled world's contours and development range
II. "Inventorying" (scanning, associative profiling, elements of analysis)	Choice of a dominant semantic feature, identification of expected "strong" semantic implicatures	Pre-choice of basic concepts that reflect the nature and possible structure of a modelled reality
III. "Verification of components' compatibility" (analysis, juxtaposition, contraposition)	Pre-analysis of currently available morpho-phonemic "code-ons" that are in use in a synchronically relevant variant of a language, predicting possible phonologically iconic effects	Pre-analysis of synchronically relevant concepts and names of typologically parallel concepts, verifying their semantic and logical compatibility
IV. "Designing" (profiling, projecting)	Specification of desirable morpho-phonemic clusters within a lexical designation unit or semantic modifiers within a phrasal designation unit	Specifying the structure of concepts' clusters and pre-defining the trajectories of likely scenarios to unfold on the world
V. "Bundling" (mapping, juxtaposition, profiling, synthesis, merging)	Combining chosen root morphemes and affixes / head words and their semantic modifiers	Fitting the previously chosen concepts into the structure of scenarios responsible for the world's development
VI. "Pre-assembly control" (analysis, contraposition, juxtaposition)	Verifying the ability of the chosen morphological or lexical "code-ons" to create expected effects within the created construals	Verifying the compatibility of chosen concepts (conceptual clusters) and the designed scenarios in dynamics in regard to the scenarios' development vector
VII. "Bundling systematization" (analysis, generalization, projecting, specification / highlighting)	Assessment of possible re-assembly or re-arrangement of lingual signs' components for achieving variants of stylistic effects or different perlocution	Assessing possible positional recombination or semantic inversion of concepts within the scenarios' structure
VIII. "Assembly" (synthesis, generalization, highlighting, profiling)	Using a created designation unit in a specific context or within a structurally larger lingual counstrual	Verbalizing scenarios sequenced according to the non-linear causative quest-like logic at the level of text/ discourse
IX. "Testing and tuning" (analysis, associative mapping, projecting, profiling)	Projective ascribing additional contextually relevant semantic features to the language unit via morphological modifications	Correcting components of the conceptual construal to solidify coherence, cohesion and relevance of the respective text; reinforcing stylistic effect at different levels of the text

X. "Finalization" (analysis, synthesis)	Consciously acknowledging the language unit in its current shape	Consciously acknowledging the text/discourse construal in its current shape
XI. "Distribution" (analysis, projecting)	Using the language units in a number of texts/discourse construals outside the initial context.	Market-oriented distribution of the text. Re-coding and adapting the textual construal to the gaming, media, advertisement spaces etc.
XII. "Synthetic-analytical processing" (analysis, synthesis, projecting)	Introspective or experimental analysis and generalization of perlocutionary effect caused by the use of the language unit	Secondary processing and generalizing signals obtained via interpreting the states of affairs within the AR; modelling a new variant of the world

For instance, within a construed fantasy world a number of toponyms are modelled so that they trigger deontically and alethically relevant associations suggested by the names' phonetics, cf:

1. *Tanelorn* ← (probably) **þegn* "thane, ruler" + **"lorn"* (< (*for*)*lorn* thus alluding to the "forgotten, inaccessible, lost" nature of the locale) / + **"lore"* (as "*lor-*" + **(e)n* "abstract quality resulting from a complete action", an irrationally triggered analogue to the Past Participle formant (*-en*) hence accentuating the "legendary" quality of the locale). Both versions fit the meanings suggested by larger syntactic designations denoting the multidimensional and extraordinary properties of the respective place: "*Tanelorn exists in many Realms, on many Planes, in many worlds, for Tanelorn is eternal… Tanelorn shelters many heroes*" (Moorcock, 1996, p. 366),

2. (2) *Thron* ← probably a metathesis of **thorn* < **þorn* "spike" implying the "sharp" / "hostile" nature of the world's environment. Respective qualifying semantic modifiers reinforce the idea: *Through blazing horror towards the <u>angry</u> world of Thron!* 208, *It was a <u>gaping</u>, <u>raw</u>, <u>boiling</u>, <u>dreadful world</u>, exuding, it seemed, stark malevolence and baleful anger …* (Moorcock, 1996, p. 262)

3. While the basic mythic operator "world" is chosen for the whole textual world, the meanings of "spinning", "expanding", "developing" are accentuated throughout the respective text (providing additional characteristics to *Thron* as a part of multiverse): *the Ghost Worlds … the Shifter System … the Sundered Worlds* (Moorcock, 1996, p. 168).

4. When elements of real languages are incorporated into artificial languages used in ARs, the achieved effect is that of recognition and the quasi-reality of the AR. For instance: <u>Meduseld</u>, *the high house in <u>Edoras</u> where Théoden now sits* (Tolkien, 2000b, p. 48), where *Edoras* is a metonymic designation of a "town, settlement" represented by O.E. *edor* "building" in the plural form (musc., *a*-stem noun); and *Meduseld* appears to be a projection of the poetic Old English designation of the king's hall as a "mead-drinking locale" i.e. a space safe for life, relaxation and social practices, cf.: *ðonne wæs þeos <u>medoheal</u> on morgentid* "then was this mead-hall in the morning time" (*Beowulf*, n.d., 484), *þonne leng ne mæg // mon mid his magum <u>meduseld</u> buan* "that no longer he may with his relatives in the mead-hall live"(*Beowulf*, n.d., 3064–3065). The whole corpus of designation units denoting a variety of significant realia pertaining to the country of Rohan creates a strong association with Anglo–Saxon England, providing a taste of "reality" to the whole textual Middle Earth (O.E. *middangearð*).

The same choice in interfunctions (I) through (V) results in the construal of *Kaer Morhen* in: *To jest <u>Kaer Morhen</u>, Wiedźmińskie Siedliszcze. Tu był kiedyś piękny zamek* (Sapkowski, 1994, p. 17). *Kaer Morhen* is allegedly a "common speech" derivative from the "old speech" Caer a'Muirehen. On the one hand, it is possible to assume a "borrowing" of *Gaer Ochren* "The Fortress of Enclosedness" (cf. *Nam seith ny dyrreith o Gaer Ochren* "none but seven arose from Gaer Ochren" (*Preiddeu Annwn*, n.d., 48) with metathesis in Ochren, which could explain the remote, secretive and fortified nature of the place. On the other hand, while *Caer* is definitely W. *caer* (Br. *kaer*, Gael., Ir. *cathair*, O.Ir. *cathir* "city", ~ Lat. *castrum* "fort") (McBain, 1911, p. 75), *Muirehen* possibly incorporates Gael., Ir., *muir* (W., Cor., Br. *mor*, Lat. *mare*) "sea" (McBain, 1911, p.

256) turning the place name into "The fortress near the [former/old] Sea". The use of Celtic roots implies the existence of a prior older civilization in the world which has experienced a catastrophic transformation as well as alluding to the mostly extinct Celtic culture in the "real" reality.

The same logic of interfunction sequencing is employed to create designation units denoting other segments of an AR (personal names, the names of objects, events, etc.).

The construction of possible worlds and the generation of secondary designation units are products of "irrational rationalization", which unfolds as a progressive sequence of interfunctions. Both construals demonstrate the fundamental property of transition from conceptual structures towards material-verbal ones (intra-oriented development) followed by consequent conceptual-semantic transformations (extra-oriented development). Apart from their cyclic occurrence, both phases reflect the evolutionary-adaptive nature of the system's development.

The symmetry and logic of interfunction sequencing correlate with the system's orientation towards "auto-structuring" (steps I—VII) or interaction with other systems (steps VIII–XII). The verbal construal's orientation towards inter-systemic relations is determined by its inclusion in discourse (communicative and not solely lingual) practices that unfold along expected socially and culturally marked trajectories. The symmetry of steps II–XII, III–XI, IV–X, V–IX, VI–VIII reflects the similarities of mental operations and the differences in their orientation, while the opposition of steps I–VII reflects the terminal states and "inversion points" of the construal.

Each designation act is therefore identified as a secondary micro-myth creation while the same is true for the macro-level transitions involved in designing larger textual construals and respective possible worlds. The fractal application of interfunctions at different levels of informational interaction results in changes within different hierarchical segments of the semiosphere and the expansion of the multiverse (both within the logically allowed and irrationally accepted coordinates). Verbally construed worlds that either fail to provide adequate associative and contextually logical expansion of the inchoative myth or do not fit the extra-contextual interactions lose their "energetic potential", turn into closed systems, fall out of larger informational structures and tend to disappear from the multiverse.

4   Conclusions

An AR or a possible world is identified as a logically accessible or intuitively accepted variant of the worldview not necessarily compliant with the empirically obtained data from the "primary" reality, or recognized as "true" from the standpoint of common sense. An infinite number of ARs constitute a multiverse (a constellation of "subversums" of diverse etiology).

An AR could exist as a mathematical model describing fuzzy entities, a complex of mental images generated along specific stimuli and employing a number of relatively stable patterns of neural interactions, or a textual construal involving designation units which denote focal axiomatic structures of experience etc. Effective noemo-genesis results in construing language signs of different volume and structure which provide sufficient stimuli for arousing mental images and sensations as a holographic "controlled hallucination".

The basic pattern of verbal world modelling is a sequence of designation acts verbalizing concepts and scenarios motivated by non-linear causative-consecutive logic and driven by irrational (mythic) basic operators. Basic semantic features contained in the inner form of the mythic concepts' names constitute a certain axiomatic "quantor" that determines the nature and fundamental parameters of the construed possible world. Sequences of designation acts thus result in the generation of fluid noematic sense generation which reflects the dynamics of the state of affairs within the construed reality. As both the choice of the basic operator and sets of semantic bifurcations are virtually unlimited, each verbally created reality is regarded as a possible world and a component of the multiverse.

The proposed formal procedural model of semantic transformations responsible for "irrational rationalization" corresponds to the universal patterns of open system functioning. Further re-

search could target verbally triggered phenomena of mental interference and resonance, irrationally driven "super-consciousness" or "psychic fractals" (i.e. large-scale systems and inter-systemic interactions).

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